

## 1 CARRIER FOR A PHYSICALLY CHALLENGED PERSON

## 2 Specification

3 Field of the Invention

4 A conveniently stored and erected carrier for physically  
5 challenged persons to enable them to be carried from places of  
6 endangerment, or to a more desirable location over a path which  
7 might otherwise present a formidable obstacle, and to provide to  
8 the person reassurance that, when in danger, a means to  
9 facilitate his rescue is in his custody.

10 Background of the Invention

11 The accommodation of physically challenged persons in public  
12 facilities has been well-advanced by legislation and societal  
13 pressure. Enablement of access and ready use of buildings,  
14 restaurants, theaters, and rest rooms are observable everywhere,  
15 as is the removal of barriers such as ledges, curbs and the  
16 provision of ramps and elevators.

17 The key to all of this is the visibility of the problem and  
18 the sympathetic understanding of others who do not share the  
19 disability. As a consequence of cooperation between these  
20 groups, these particular matters have been immeasurably improved.

21 There remain, unsolved and unseen, many problems frequently  
22 experienced by many physically challenged persons which,  
23 precisely because they are unseen, and because their events are  
24 less frequent, have not received societal attention and

EV01206218 US

7 day 03

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1 correction. In fact, their existence is not brought to anyone's  
2 attention, such as by placards informing persons that a ready  
3 means for evacuation by physically challenged persons is not  
4 available. Because of their unobtrusive nature (to others) they  
5 are unlikely to, and it becomes the function of individuals such  
6 as inventors and interested companies to devise means which can  
7 at least reduce risk and facilitate the movement and safety of  
8 physically challenged persons who find themselves in stressful or  
9 dangerous situations.

10 For example, physically challenged persons who have no  
11 control over or sufficient strength in their legs, thereby  
12 lacking self-locomotion, must rely on supports such as wheel  
13 chairs for routine movement. So long as they are safely in the  
14 chair and the chair is in safe circumstances, there is no  
15 problem.

16 But what if the person in that chair is on an upper floor in  
17 a tall building, the building is on fire, or there is an  
18 earthquake or terrorist event, and the elevators cannot be used?  
19 The wheel chair then is worse than useless. There is no means  
20 for the person to use the chair to escape, and the task of being  
21 carried either in it, or separately from it is often impossible  
22 because there is no ready means to engage and carry the chair or  
23 person, even if there are people right there who are willing to  
24 do so if they had the physical capability for the task. Persons

1 who are physically sufficient for this task are few, and it  
2 cannot be assumed that any of them will necessarily be present  
3 when they are needed.

4 A physically challenged person inherently worries when he or  
5 she goes above the first floor of a building. The assurance of  
6 access provided by law and by way of friendly inclination provide  
7 for access, but not for quick evacuation from very dangerous  
8 buildings, such as one on fire. One means to alleviate this  
9 concern is to provide a device according to this invention which  
10 is economically affordable, and which can be kept in an office or  
11 apartment without taking up much room. An office can readily  
12 afford to have a few of these devices on its shelf, and these  
13 devices enable reasonably fit people to carry the person out of  
14 harm's way. In fact, in some of its alignments only one person  
15 is needed, and the person carrying can have a free hand to hold a  
16 side rail.

17 While the term "physically challenged" as used this far  
18 relates primarily to persons with nearly total loss of  
19 locomotion, there are many others where this invention is useful.  
20 Persons who use walkers, person with Alzheimers, and pregnant  
21 women, are unable rapidly to descend steep stairways. They  
22 suffer from the same needs as those more challenged, and have the  
23 same concerns.

24 There is yet another example of a use of one of the

1 alignments of this invention - the carrying from harm's way of an  
2 injured soldier by two of his fellows. Very often both hands of  
3 the two men carrying the injured person are fully involved with  
4 carrying the wounded, such as by the "cross arm" carry of two men  
5 whose arms there by form a cradle. This makes the three of them  
6 a target without defensive capacity. In one alignment of this  
7 device, each of the two men carrying the wounded will have a free  
8 hand with which he can shoot, however inaccurately, and the  
9 wounded might also be able to fire a weapon. However inaccurate  
10 their aim might be, they will still be able to keep some hostile  
11 heads down.

12 The above may reasonably be regarded as ultimate problems.  
13 With respect to their seriousness, as extremes they overlook more  
14 usual and less dramatic, but still disturbing situations. These  
15 other situations lack only the ultimate risk of immediate death.  
16 Still, to a person exposed to them, or who is reasonably fearful  
17 of them, the anticipation of perils, injury and delay of succor  
18 are troubling in the extreme. A challenged person in a hotel  
19 room who hears the fire alarm ring is panicked, even if the alarm  
20 is a false one, as so often happens. The knowledge that a  
21 convenient means to affect his or her evacuation is at hand is  
22 very quieting even when there is no alarm. The person will have  
23 brought the device with him.

24 The perils attending the fall of a physically challenged

1 person are discussed in applicant's United States patent No.  
2 6,532,610, which issued March 18, 2003. This patent particularly  
3 addresses the problem of raising a person who has fallen to the  
4 floor and does not have the ability to raise himself or herself.  
5 It also considers the problem of lifting and conveying the raised  
6 person to a different location.

7 The principal problem addressed in the said patent is the  
8 avoidance of injury to the person being raised, and also to the  
9 persons raising him or her. A frail, fallen person often is  
10 injured by the most careful paramedic who must hold him or her  
11 while lifting the person. Broken ribs are a frequent  
12 complication.

13 In addition, and especially in residences for the elderly,  
14 very high workers compensation insurance rates reflect the  
15 potential for damage to the backs of attendants who attempt to  
16 lift the person. As a consequence, there is a frequent refusal  
17 by these people to raise the person. Instead they leave the  
18 person in place and await the arrival of paramedics to lift the  
19 person. Their back is saved, and their employer's insurance is  
20 spared, but the fallen person still suffers. This situation also  
21 pertains in senior care homes, nursing homes, and to senior  
22 caregivers in private residences.

23 This invention is not intended to be a solution to the above  
24 problems, although it can be so used. Instead, it is principally

1 directed toward the safe and expedient conveyance of a physically  
2 challenged person already prepared for movement, away from a  
3 place of peril or disadvantage, or even to a better and more  
4 enjoyable place to be.

5 This does not always mean such ultimate events as fleeing  
6 from a fire. There are often less baleful events, but of serious  
7 mien. The most benign may be the safe transport of a person from  
8 a car or wheel chair up or down a long set of stairs while there  
9 is no active emergency or even from a chair to a bed, or reverse.  
10 Another may be the carriage of an injured fisherman away from his  
11 place of injury.

12 As to this latter situation, persons who fish in distant  
13 streams often hike several miles to a good stream from a drop-off  
14 location. Then while in the stream they slip on the rocks and  
15 sprain an ankle or break a leg. The task is now to get them back  
16 to the drop-off location.

17 Sometimes they can hobble back. Other times they must rely  
18 on their companions to carry them, or wait for a crew to come for  
19 them. Except for his accident, he is not disabled in the sense  
20 of a person with a spinal injury but he is definitely physically  
21 challenged. In short, this invention provides for the safe  
22 transport of a person who, without it, must either perish in  
23 place, or somehow crawl to help.

24 This same situation pertains to hikers and back packers as

1 well as to fishermen. They often are 12 to 20 miles from succor.

2 Similarly, a wounded or otherwise injured person can be  
3 carried expeditiously.

4 Persons who have had little or no experience with moving  
5 physically challenged persons will have difficulty recognizing  
6 the comparative effort needed to lift the person as compared to  
7 moving them sidewardly or lowering them. When a person is  
8 already elevated, it takes much less effort to keep them that  
9 high, or to lower them, but much more effort to raise them. This  
10 invention overcomes much of the stress in lifting a person, and  
11 provides greater stability while lowering the person.

12 It is yet another object of this invention to provide a  
13 carrier which can be left under the person on top of or beneath a  
14 seat cushion where it will be available when the time comes to  
15 move the person. At that time it can be quickly erected and the  
16 person moved.

17 It is the object of this invention to provide a convenient,  
18 portable device that can be assembled to a person, which provides  
19 apparatus employable by others to raise and move the person,  
20 either by hand or by suspension from the torso of the care-giver.  
21 It also provides a wide range of alignments to facilitate various  
22 modes and circumstances of carrying a person.

23 Brief Description of the Invention

24 A carrier according to this invention comprises a foldable

1 sheet having a seat panel, a pair of lateral side panels, and a  
2 back panel, said side panels and back panels when assembled in  
3 the erect configuration of the device being contiguous or  
4 adjacent to a respective edge of the seat panel. The back panel  
5 may be contiguous and continuous with either the seat panel or  
6 with one of the side panels. Each of said side and back panels  
7 has a terminal edge, which, when they are erected become their  
8 upper edges. A fastener or fasteners will join some adjacent  
9 free edges to form said panels into a seat for an occupant when  
10 the panels are erected to form the structure.

11 According to an optional feature of the invention, a second  
12 rank of anchors is provided on each of the side panels, spaced  
13 below the rank adjacent to the upper edge.

14 According to this invention, a plurality of anchors is  
15 provided in a rank adjacent to the upper edges of each of the  
16 side panels so that a person in the carrier can readily be lifted  
17 by handles engaged to the anchors.

18 According to still another optional feature of the  
19 invention, a shoulder loop is attachable to at least one of the  
20 side panel edges so that part of the weight can be supported on  
21 the torso of a helper. A pair of such shoulder loops can be  
22 provided, one on each side, for two persons to carry, or for one  
23 person to carry piggy back, using one loop on each shoulder.

24 According to still another preferred but optional feature of

1 the invention, a front panel is formed on the edge of the seat.  
2 panel remote from the back panel, which includes an anchor on its  
3 edge remote from the back panel for attachment of a handle to  
4 enable the front panel to be raised and if desired pulled to move  
5 the occupant forwardly toward a preferred location.

6 The above and other features of this invention will be fully  
7 understood from the following detailed description and the  
8 accompanying drawings, in which:

9 Brief Description of the Drawings

10 Fig. 1 is a plan view of a carrier according to the  
11 invention;

12 Fig. 2 is a bottom view of Fig. 1;

13 Fig. 3 is a top view of the carrier of Fig. 1, erected;

14 Fig. 4 is a front view of Fig. 3;

15 Fig. 5 is a plan view of another embodiment of the carrier;

16 Fig. 6 is a fragmentary view of a handle for the carrier;  
17 and.

18 Fig. 7 is a flat view of a shoulder loop for use with the  
19 carrier.

20 Detailed Description of the Invention

21 Fig. 1 shows a plan view of the presently preferred  
22 embodiment of a carrier 10 according to this invention, laid out  
23 flat. It is preferably made entirely of flexible material, but  
24 if preferred may include areas which are stiffened or even rigid.

1      The most useful and convenient carrier will be made of a strong  
2      flexible cloth such as light weight canvas. It can even be made  
3      entirely of a net material if preferred, or an open weave of  
4      washable plastic fiber. Flexible material will be preferred for  
5      many uses, because it can be folded or rolled into a small sized-  
6      body that can be carried and stored in the same sense as a first-  
7      aid kit. For example it may be stored in an office in a high  
8      rise building to be used in case of a fire or other need to  
9      evacuate injured or challenged persons. It is the kind of  
10     product which can accompany the person to give him or her the  
11     comfortable feeling that in an event of necessity, he or she will  
12     have the means to enable his or her removal.

13     Carrier 10 includes a seat panel 11 with a back edge 12,  
14     parallel side edges 13, 14, and a front edge 15.

15     A back panel 16 includes what will become a top edge 17, and  
16     a bottom edge 18.

17     Side panels 25, 26 are joined to the seat panel at opposite  
18     side edges 13, 14. Each has an upper edge 27, 28, and a rear  
19     edge 29, 30 both respectively.

20     An optional front panel 35 has a rear edge 36 joined to  
21     front edge 15 of the seat panel, and a front edge 37.

22     This is the simplest embodiment of the invention, and the  
23     readiest to erect. It is a single piece of material, erected by  
24     folding it at the various intersections of the panels. In this

1 embodiment, folds are made at intersections 13, 14 and 29. When  
2 a front panel is provided, it will fold relative to the seat  
3 panel at edge 15.

4 To form the seat structure, attachments 38 and 39 are placed  
5 on edges 40 and 30 of panels 16 and 26. These preferably are  
6 strips of hook and loop fabric, often called VELCRO, which when  
7 engaged are tightly held together as shown in Fig. 3.

8 Fig. 3 and 4 show the erected configuration, wherein the  
9 raised side and rear panels form a cavity 42 open at the front in  
10 which a person can be supported. In practice, the person will  
11 have been placed on the carrier when flat, and the panels brought  
12 up next to him.

13 Fig. 5 shows a somewhat simpler embodiment of carrier 55.  
14 Again it is a single unitary piece of suitable material. It  
15 includes a seat panel 56, a back panel 57 and side panels 58, 59.  
16 The side and back panels can be folded up along fold lines 60, 61  
17 and 62 to form a cavity. Attachments (not shown) can hold the  
18 adjacent edges together as in Fig. 1, strips of VELCRO being  
19 preferred.

20 The panels can all be folded relative to one another at  
21 their joined edges so that the carrier can be folded into a small  
22 bulk for ready carrying when not in use. If all of the panels  
23 are flexible, the carrier can be rolled up or folded to a smaller  
24 envelope size.

1 In use, the side and back panels are folded up to form a  
2 seat for a person. While various kinds of fasteners can be used  
3 to join adjacent edges of the erected side and back panels,  
4 including snaps, slide fasteners and buttons, attachment is only  
5 necessary at the upper edges. Merely joining the adjacent  
6 corners will create a necessary seat, although a more continuous  
7 attachment such as Velcro strips will be preferred. All such  
8 arrangements are contemplated in this invention.

9 All embodiments of this invention are intended for  
10 convenience of storage and for temporary placement between times  
11 when a person is to be moved. Also, they are intended to include  
12 features which enable readier and more convenient lifting,  
13 carrying, and lowering of a person held in it.

14 This is accomplished by providing means to engage or to get  
15 ahold of the carrier, and to lift or hold it when engaged to the  
16 person.

17 The simplest engagement devices are loops or arches  
18 integrated into the carrier itself. A more rugged and often more  
19 desirable arrangement is handles that are separably engageable to  
20 anchors that are integrated into the carrier. All of the above  
21 are collectively called "engagements". More durable and stronger  
22 carriers will generally provide strong anchors firmly attached to  
23 panels, and handles or loops which will be attached to them by  
24 clips. Less durable carriers may use attachments on the panels

1 which themselves can be used as handles, or as anchors for the  
2 ends of loops. Design and intended usage criteria will determine  
3 which kind of structure to use.

4 Fig. 5 differs from the embodiment of Fig. 1 in that it  
5 requires joinders at two sets of edges, rather than only one.

6 The most elegant and ruggedest engagement is shown in Figs.  
7 1-4. In this embodiment, anchors (sometimes called  
8 "engagements") in the form of metal rings are firmly and  
9 permanently attached to the carrier at selected locations. Fig.  
10 6 shows two such anchors 70, each of which comprises a metal ring  
11 71 held in place by a fabric bend 72 that is strongly sewed to  
12 the carrier. Thus this ring can be pressed flat against the  
13 carrier or pulled out for engagement by a next assembly such as a  
14 handle end or the end of a loop.

15 Fig. 6 also shows one such handle 73. It includes a central  
16 grip 74, which may be quite rigid, and on each end, a reliable  
17 clip 75, 76 which will engage the ring. Now the handle can be  
18 used to lift or carry the loaded carrier.

19 Instead of, or in addition to a handle, a shoulder loop 78  
20 (Fig. 7) has a central flexible length 79 and a releasable clip  
21 80, 81 at each end.

22 By attaching the handle or loop to anchors as yet to be  
23 described, the carrier can conveniently be supported by a helper  
24 person. Notice that such a handle or shoulder loop can be

1 attached to any selected pair of anchors, so that lifting force  
2 can be exerted in selected, convenient locations.

3 A first rank 85, 86 of anchors is attached to each side  
4 panel on or adjacent to its respective edge which will be  
5 uppermost when the carrier is in its erect condition. While more  
6 or fewer of these anchors can be provided, four of them will  
7 provide for a useful variety of modes of carriage.

8 For example, rank 85 has four anchors 87, 88, 89 and 90.  
9 Any two of these can be bridged by a handle such as shown in Fig.  
10 6. If desired, two handles can be applied, one forwardly of the  
11 other.

12 An optional second rank 91, 92 is provided on the outside of  
13 the side panels, spaced well below the upper edge, where it will  
14 provide for lift below the upper edge and above the seat panel.  
15 For example, second rank 91 has four anchors 93, 94, 95 and 96.  
16 These enable one to place a handle at a lower elevation instead  
17 of (or in addition to) the upper rank. When carrying a very  
18 heavy person, or if the height to which the carrier is to be  
19 lifted is substantial, a lower "grip" on the carrier will be  
20 preferred.

21 Carrying a person using only handles for a considerable  
22 distance can be tiring. To alleviate this situation, a shoulder  
23 loop 78 (Fig. 7) can be attached to any of the anchors, and in  
24 particularly to two anchors on one side panel. They may be

1 permanently attached, or can be detachably secured.

2 Front panel 35 offers a significant advantage when the  
3 person must be moved while in the carrier, but while sitting or  
4 laying down. A handle 91, similar to the side handles is  
5 attached (or detachably attached) to the front edge of the front  
6 panel. Then, with the person's legs atop this panel, the person  
7 can be pulled forwardly. If desired, the front panel can be  
8 detachably attached to the seat panel.

9 Instead of separable handles, the handles may be permanently  
10 incorporated in the structure. This will be most advantageous in  
11 lighter-weight one time usage devices. Then, two spaced apart  
12 anchors may be permanently connected by a flexible, cloth handle  
13 which will collapse to a small shape. In fact, it may be  
14 preferred for use in a chair, because it will remain available at  
15 all times, and can itself provide not only a handle, but also  
16 means for attachment of a loop. When a permanently installed  
17 "handles" are provided, they also are provided in ranks as  
18 before.

19 For simplicity in disclosure, engagements have been shown in  
20 Fig. 5. They will be provided as desired, just as the embodiment  
21 of Fig. 1.

22 The modes of carrying or lifting the person are many and  
23 varied. In the simplest mode, two handles are provided on each  
24 side panel; and the person can be lifted by two people.

1 For more extreme situations, a loop may be formed at one  
2 side to be placed over the shoulder of a caregiver, and he can  
3 use one hand on a handle. This can be done on both sides for two  
4 caregivers. Then each has a spare hand to attend to other  
5 matters, such as shooting a gun. So can the person being  
6 carried. Or one of the persons can hold a rail with his free  
7 hand.

8 For piggy back carriage, a shoulder loop is formed at each  
9 side panel. The caregiver backs into the person being carried,  
10 places a loop over each shoulder, and then carries the person  
11 behind and "on" him.

12 When a higher lift is necessary, the same arrangements can  
13 be made, using the second (lower) rank of anchors.

14 Occupant grips 100, 101 can be formed as loops at the formed  
15 ends of the side panels. This gives the person a sense of  
16 stability. Also, a seat belt 102 can be provided between the  
17 side panels, detachably attached at one or at both of its ends.

18 The versatility of this device will be appreciated from the  
19 foregoing.

20 The use of this device will be evident from the foregoing.  
21 The person is somehow placed on the seat, perhaps by rolling him  
22 or her to one side and putting it in place, or by boosting him  
23 and sliding it under him, and then raising him at the hips. The  
24 back and side panels are next raised and the panels are joined.

1 Then, using the handles and/or the loops, the person is raised  
2 and carried.

3 This invention thereby provides a lightweight, convenient  
4 device for raising and carrying a physically challenged person.  
5 The orderliness of the lifting arrangement is such as to protect  
6 the backs of the persons doing the lifting. It enables fallen or  
7 incapacitated persons to be moved safely for all concerned.

8 It also frees persons from anxiety, who are slow to move, or  
9 bound to a walker or wheel chair. Stair treads are very narrow  
10 compared to the base of a walker, and pregnant women often cannot  
11 see them anyway. This device enable a person to be safely and  
12 expeditiously to be carried down stairs. Further, he or she  
13 knows it is available.

14 This invention is not to be limited by the embodiments shown  
15 in the drawings and described in the description, which are given  
16 by way of example and not of limitation, but only in accordance  
17 with the scope of the appended claims.